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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,676	10/23/2001	Yeong-Taeg Kim	SAM2.0002	3180

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EXAMINER	
YENKE, BRIAN P	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/001,676	KIM ET AL.	
	Examiner	Art Unit	
	BRIAN P. YENKE	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *PreAmendment (23 October 2001)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-15 and 18- 22* is/are rejected.

7)☒ Claim(s) *5,6,16 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 14-15 are objected to because of the following informalities: As currently written, claims 14-15 are dependent upon themselves (i.e. 14-15 respectively). The examiner has rejected claims 14-15 as being dependent upon claim 13 and 14 respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2a. Claims 1, 2, 10-14 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang et al., US 2002/0027610.

In considering claims 1 and 13,

a) the claimed inputting a video signal...is met by input 101, which are an interlaced video signal (Fig 1).

b) the claimed computing a frame difference signal...is met by pixel difference unit 107, which takes the luminance value differences of pixels in prescribed fields (Fig 3, page 2, Para 23).

c) the claimed forming a point-wise motion detection signal...is met by motion detection 109 (Fig 1), which computes the motion metrics.

d) the claimed computing a region-wise motion detection signal...is met by motion detection 109 (Fig 1), which computes the motion metrics.

e) the claimed forming from the region-wise motion detection signal a motion decision value...is met by spatial median filter 110 and LUT 11, where the motion metrics computed by motion detector 109 are filtered via spatial median filter 110 and then LUT 111 obtains the weight (blending factor), for frame or field interpolation.

In considering claims 2 and 14,

The claimed low-pass filtering the difference signal prior to the step of forming the point-wise motion detection signal is met by LPF 108 (Fig 1).

In considering claims 10 and 22,

a) the claimed spatially interpolating a value of the video signal...is met by frame interpolator 105 (Fig 1)

b) the claimed temporally interpolating the value of the video signal...is met by field interpolator 106 (Fig 1).

c) the claimed forming a motion decision value...(refer to rejection of claims 1 and 13 above).

d) the claimed mixing an output signal...is met by alpha blender 112 (Fig 1) where the blending of the video signal is based upon the motion value determines the blending of the field and/or frame interpolation (page 3, Para 40-44).

In considering claims 11 and 12,

Jiang discloses that based upon the motion metric value, which varies between 0 and 1, (page 3, Para 42) determines the blending factor of the interpolation methods. As shown in Fig 5, when there is little or no motion (motion metric value = 0) the field (temporal) interpolation is used, where there is high or maximum motion (motion metric value = 1) the frame (spatial) interpolation is used.

2b. Claims 1-4, 7-15 and 19-22 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 10/003391 (filed 22 October 2001) which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 7, 9, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Jiangg et al., US 2002/0027610.

In considering claims 3 and 15,

Regarding the matrix of coefficients for the LPF. Jiang discloses a LPF 108 which is used to smooth the pixel luminance value differences. However, Jiang does not explicitly disclose the LPF being defined by a matrix. Jiang does disclose computing various (Fig 3) pixel luminance value differences in order to determine the motion for each missing pixel and then interpolating the missing lines to create a progressive field (from the interlaced signal).

It is noted by the examiner that a filter, which is defined by a matrix, is conventional in the art. Since a filter based upon the application, can be weighted according to the input (based on position, size, etc) in order to provide a predetermined output.

Thus the examiner takes "OFFICIAL NOTICE" regarding a LPF defined by a matrix.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jiang which discloses a LPF in smoothing out the

differences between various differences on pixels in various locations, to utilize a LPF defined by a matrix to filter the respective differences by a predetermined factor, to provide a smoothed signal based upon it's relevance to the missing pixel.

In considering claims 7 and 19,

Regarding the use of a LPF to filter the region-wise motion detection signal prior to outputting.

Jiang does disclose the use of a LPF 108 (Fig 1), however Jiang does not explicitly disclose the use of a LPF prior to outputting.

However, the use of a filter (LPF), which is used to filter a signal, whether at the input, output or in-between is a matter of design choice, based upon the size of the system, the type/quality of the signal inputted/output and thus bares no patentable weight.

In considering claim 9,

As stated above with respect to claims 3 and 15, Jiang does not specifically disclose a matrix for the LPF, thus Jiang does not disclose the coefficients as claimed in the present claim.

However, the examiner maintains that coefficients of a matrix, which are used by a filter, are arbitrary based upon the designer and the system/signals being utilized. Therefore, the selection of coefficients bares no patentable weight, unless the newly discovered coefficients derive/provide some unexpected result(s) which was previously unobtainable/undiscoverable.

Allowable Subject Matter

4. Claims 5-6 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

5. Claims of 1-4, 7-15 and 18-22 of this application conflict with claims 1-4, 6-14 and 16-19, respectively of Application No. 10/003391. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefore..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-4, 7-15 and 18-22 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-4, 6-14 and 16-19, respectively of Application No. 10/003391. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

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(FAX) 703-305-7786

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PAIR (http://pair.uspto.gov) provides customers direct secure access to their own patent application status information, as well as to general patent information publicly available. EFS allows customers to electronically file patent application documents securely via the Internet. EFS is a system for submitting new utility patent applications and pre-grant publication submissions in electronic publication-ready form. EFS includes software to help customers prepare submissions in extensible Markup Language (XML) format and to assemble the various parts of the application as an electronic submission package. EFS also allows the submission of Computer Readable Format (CRF) sequence listings for pending biotechnology patent applications which were filed in paper form.

BRIAN P. YENKE
Primary Examiner
Art Unit 2614

B.P.Y
17 March 2004